



Viruses and Dolphins

Name: _____
Period: _____
Date: _____

Part I: What is a Virus?

Use the Internet or the resources provided by your teacher to answer the following questions.

1. Is a virus considered a living thing? Explain your answer!

2. Describe the structure of a virus.

3. Bacteria are tiny living organisms made up of a single cell. How does the size of a virus compare to the size of a bacterium?

4. Why does a virus depend on a host cell in order to make more viruses?

5. Explain how a virus invades a host cell and describe what happens once inside.





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6. Suppose you are eating a salad one night during dinner while watching the local news. A reporter appears on the screen and announces that a new virus has been discovered. This new virus infects all types of lettuce. Are you worried about becoming infected? Why or why not?

Part II: Viruses and Dolphins

Humans are not the only species affected by viruses. All sorts of bacteria, plants, and animals are subject to viral infections. Dolphins are no exception! One virus that dolphins are susceptible to is called morbillivirus. A doctor at the University of Texas examined a stranded pantropical spotted dolphin named Hope after she passed away in 1995. Hope had tested positive for morbillivirus. Read Dr. Cowan's report (http://www.tmmsn.org/pathology/path_Hope2.html) and then answer the questions below.

7. How is this virus transmitted from one dolphin to another?

8. a. What types of tissues does morbillivirus target?





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b. Two possible signs that a dolphin has morbillivirus are muscular tremors and impaired swimming. Which type of tissue would most likely have been effected in a dolphin exhibiting these symptoms? Explain your answer.

9. Morbillivirus is not always fatal. What is one possible explanation for this?

10. The type of morbillivirus that causes disease in dolphins does not infect humans.

a. When a dolphin becomes stranded on shore, members of an organization called a stranding network will go to the site and assist the dolphin. Is it possible that these people will exhibit symptoms of morbillivirus after coming in contact with a stranded dolphin that has the disease? Explain your answer.

b. If a dolphin trainer from a nearby facility goes to the stranding site to help the dolphin and then returns to his training job later that afternoon, do you think it would be possible for the dolphins at the facility to become infected? Explain your answer.





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Part III: Transmission of a Virus

Now that you know a little more about viruses, let's take a look at how a virus like morbillivirus might be spread among a dolphin population. Your teacher will provide you with a cup containing a liquid. **Please do not drink or smell the liquid.** You will be interacting with three other students during this activity.

Begin by selecting one of your classmates to pair up with. One of you will need to carefully pour the liquid from your cup into your partner's cup. Once the liquids have been combined, carefully pour half of the liquid back into the empty cup so each of you have an equal amount of liquid. Record the name of the person you exchanged with on the line below. Repeat this process with two other students. You may not exchange with the same person twice!

Student Names:

1. _____
2. _____
3. _____

Once you have completed this, return to your seat. Your teacher will now come around and place a few drops of bleach in each student's cup. If your liquid fizzes, then you are holding a cup that has tested positive for the "Fizzies Virus. Share the results of the test with your class. Work together with your classmates and teacher to see if you can determine who had the one cup that was originally infected!

11. Dolphins are very social, and are usually found in groupings called pods. Based on this knowledge, and your experience with the "Fizzies Virus, do you think it is unrealistic to assume that morbillivirus is somewhat common within dolphin populations?





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Part IV: Viruses and Humans

There are many types of viruses that can cause disease in humans. As you read in Dr. Cowan's report, morbillivirus is similar to a virus that causes measles in humans! Your teacher will now provide you with the name of a human disease caused by a virus. Use the Internet or other provided resources to answer the following questions about the disease.

12. What is the name of the disease you will be researching? _____

13. What is the name of the virus that causes this disease? _____

14. How is this virus transmitted?

15. What are the symptoms associated with the viral disease?

16. What treatments are available for this disease?

17. How can this disease be prevented?

